

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	29	enantioselective nucleophilic addition reaction	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 13:36
L2	1005	hydroxy diketone	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 14:26
L3	63	568/412	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 14:26
L4	0	L1 and L3	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 14:26
S1	29	enantioselective nucleophilic addition reaction	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 09:59
S2	1028	enamide	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 09:59
S3	1096	glyoxylic acid ester	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:00
S4	9	S2 and S3	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:23
S5	1	S1 and S4	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:00
S6	5441	chiral catalyst	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:01
S7	3	S4 and S6	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:01
S8	697510	copper	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:01

## EAST Search History

S9	1205	S6 and S8	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:01
S10	5	S1 and S9	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:02
S11	738	alpha hydroxy gamma lactones	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:02
S12	1	S4 and S11	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:03
S13	1005	hydroxy diketone	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:03
S14	0	S4 and S13	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:03
S15	1	S4 and S1	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:04
S16	6	S8 and S4	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:08
S17	103633	carbonyl group	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:09
S18	334	S2 and S17	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:09
S19	51	S18 and S6	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 10:09
S20	2	"6403818"	US-PGPUB; USPAT; EPO; DERWENT	WITH	ON	2007/08/28 11:23

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 09:48:14 ON 28 AUG 2007

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 09:48:25 ON 28 AUG 2007

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STRUCTURE FILE UPDATES: 27 AUG 2007 HIGHEST RN 945649-99-0

DICTIONARY FILE UPDATES: 27 AUG 2007 HIGHEST RN 945649-99-0

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TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

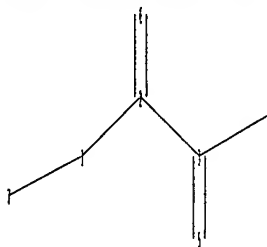
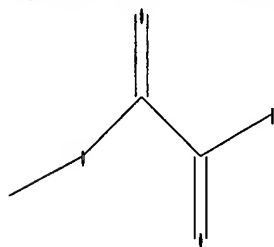
<http://www.cas.org/support/stngen/stndoc/properties.html>

=> ....Testing the current file.... screen

ENTER SCREEN EXPRESSION OR (END):end

=>

Uploading C:\Program Files\Stnexp\Queries\10587078a.str



chain nodes :

1 2 3 4 5 6 7

chain bonds :

1-2 1-7 2-3 2-6 3-4 3-5

exact/norm bonds :

1-2 1-7 2-6 3-5

exact bonds :

2-3 3-4

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom

L1 STRUCTURE UPLOADED

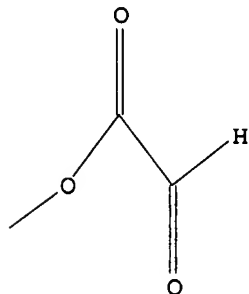
=> que L1

L2 QUE L1

=> d L1

L1 HAS NO ANSWERS

L1 STR



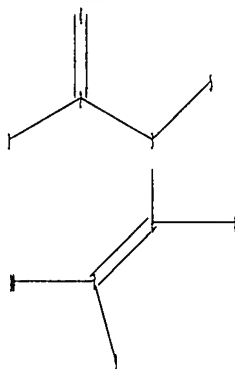
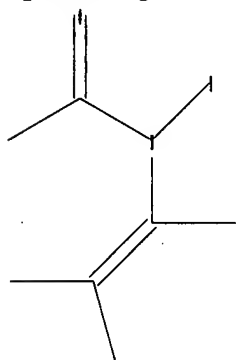
Structure attributes must be viewed using STN Express query preparation.

=> ....Testing the current file.... screen

ENTER SCREEN EXPRESSION OR (END):end

=>

Uploading C:\Program Files\Stnexp\Queries\10587078b.str



chain nodes :

1 2 3 4 5 6 7 8 9 10

chain bonds :

1-2 2-3 2-4 3-5 3-6 6-7 6-8 7-9 7-10

exact/norm bonds :

2-3 2-4 3-6

exact bonds :

1-2 3-5 6-7 6-8 7-9 7-10

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

L3 STRUCTURE UPLOADED

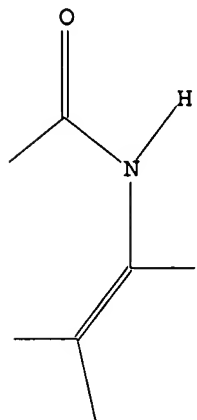
=> que L3

L4 QUE L3

=> d L3

L3 HAS NO ANSWERS

L3 STR



Structure attributes must be viewed using STN Express query preparation.

=> s L1 and L3 full

FULL SEARCH INITIATED 09:49:32 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 2357 TO ITERATE

100.0% PROCESSED 2357 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

L5 0 SEA SSS FUL L1 AND L3

=> s L1 full

FULL SEARCH INITIATED 09:49:48 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 1272590 TO ITERATE

78.6% PROCESSED 1000000 ITERATIONS

96 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.07

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 1272590 TO 1272590

PROJECTED ANSWERS: 96 TO 155

L6 96 SEA SSS FUL L1

=> s L3 full

FULL SEARCH INITIATED 09:50:02 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 21045 TO ITERATE

100.0% PROCESSED 21045 ITERATIONS

532 ANSWERS

SEARCH TIME: 00.00.01

L7 532 SEA SSS FUL L3

=> s L6 and L7

L8 0 L6 AND L7

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

516.30

516.51

FILE 'CAPLUS' ENTERED AT 09:50:26 ON 28 AUG 2007

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FILE COVERS 1907 - 28 Aug 2007 VOL 147 ISS 10

FILE LAST UPDATED: 27 Aug 2007 (20070827/ED)

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=> s L6

L9 88 L6

=> s L7

L10 286 L7

=> s L9 and L10

L11 0 L9 AND L10

=> s reaction

3075427 REACTION

2214584 REACTIONS

L12 4122479 REACTION

(REACTION OR REACTIONS)

=> s L9 and L12

L13 65 L9 AND L12

=>

---Logging off of STN---

=>

Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

Enter NEWS followed by the item number or name to see news on that specific topic.

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FILE 'HOME' ENTERED AT 10:48:40 ON 28 AUG 2007

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 10:48:58 ON 28 AUG 2007

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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> ....Testing the current file.... screen

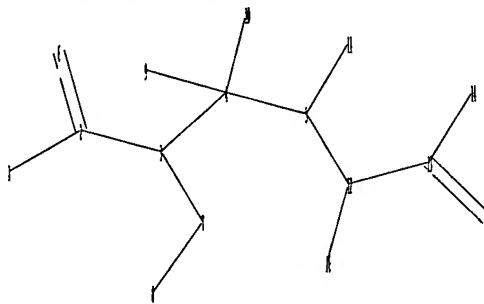
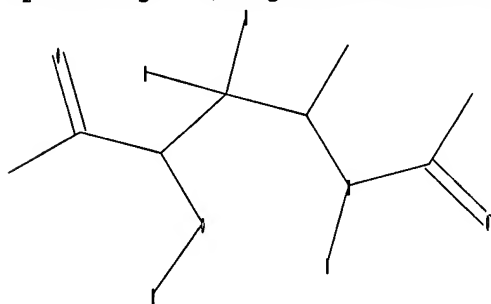
ENTER SCREEN EXPRESSION OR (END):end

=> screen 1006

L1 SCREEN CREATED

=>

Uploading C:\Program Files\Stnexp\Queries\10587078.str



```

chain nodes :
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
chain bonds :
1-2  2-3  2-6  3-4  3-7  4-5  4-9  4-10  5-11  5-12  7-8  12-13  12-16  13-14
13-15
exact/norm bonds :
2-6  3-7  5-12  12-13  13-15
exact bonds :
1-2  2-3  3-4  4-5  4-9  4-10  5-11  7-8  12-16  13-14

```

```

Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:Atom  10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom

```

L2        STRUCTURE UPLOADED

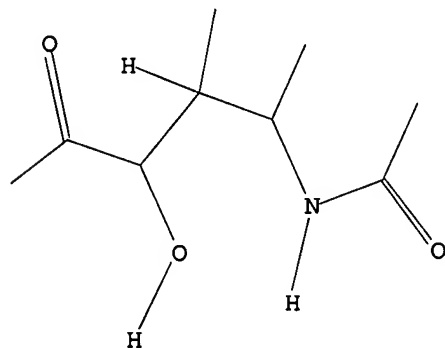
=> que L2 AND L1

L3    QUE L2 AND L1

=> d L2

L2 HAS NO ANSWERS

L2                    STR



Structure attributes must be viewed using STN Express query preparation.

=> s L2 full

FULL SEARCH INITIATED 10:49:23 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED -        23212 TO ITERATE

100.0% PROCESSED        23212 ITERATIONS

0 ANSWERS

SEARCH TIME: 00.00.01

L4                    0 SEA SSS FUL L2

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

172.55

172.76

FILE 'CAPLUS' ENTERED AT 10:49:53 ON 28 AUG 2007

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FILE LAST UPDATED: 27 Aug 2007 (20070827/ED)

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=> s L4

L5 0 L4

=> s glyoxylic acid ester

7152 GLYOXYLIC

4426861 ACID

1588786 ACIDS

4928784 ACID

(ACID OR ACIDS)

605403 ESTER

444892 ESTERS

839979 ESTER

(ESTER OR ESTERS)

L6 118 GLYOXYLIC ACID ESTER

(GLYOXYLIC (W) ACID (W) ESTER)

=> s enamide

1070 ENAMIDE

762 ENAMIDES

L7 1367 ENAMIDE

(ENAMIDE OR ENAMIDES)

=> s L6 and L7

L8 0 L6 AND L7

=> s enantioselective nucleophilic addition reaction

25201 ENANTIOSELECTIVE

16 ENANTIOSELECTIVES

25209 ENANTIOSELECTIVE

(ENANTIOSELECTIVE OR ENANTIOSELECTIVES)

55012 NUCLEOPHILIC

13 NUCLEOPHILICS

55017 NUCLEOPHILIC

(NUCLEOPHILIC OR NUCLEOPHILICS)

173159 ADDITION

15833 ADDITIONS

186183 ADDITION

(ADDITION OR ADDITIONS)

1613054 ADDN

72595 ADDNS

1658753 ADDN

(ADDN OR ADDNS)

1759269 ADDITION

(ADDITION OR ADDN)

3075427 REACTION

2214584 REACTIONS

## 4122479 REACTION

(REACTION OR REACTIONS)

L9 2 ENANTIOSELECTIVE NUCLEOPHILIC ADDITION REACTION  
(ENANTIOSELECTIVE (W) NUCLEOPHILIC (W) ADDITION (W) REACTION)

=&gt; d L9 1-2 bib abs

L9 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:696867 CAPLUS  
DN 143:194235  
TI Method of enantio-selective nucleophilic addition reaction for conversion of enamide to imine and method of synthesizing  $\alpha$ -amino- $\gamma$ -keto acid ester  
IN Kobayashi, Shu  
PA Japan Science and Technology Agency, Japan  
SO PCT Int. Appl., 25 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005070876	A1	20050804	WO 2005-JP1282	20050124
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1707559	A1	20061004	EP 2005-704279	20050124
	R: DE, FR, GB				
	US 2007161804	A1	20070712	US 2006-587075	20060929
PRAI	JP 2004-16407	A	20040123		
	WO 2005-JP1282	W	20050124		
OS	MARPAT 143:194235				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB An asym. synthesis of amino acid compound such as  $\alpha$ -amino- $\gamma$ -keto acid ester and  $\alpha,\gamma$ -diamino acid esters and conversion of the latter into  $\gamma$ -lactams are described. The amino acid compound is useful as a starting material or synthetic intermediate for production of medicinal products, agrochemicals, perfumes, functional polymers, etc. There is provided a method of enantio-selective nucleophilic addition reaction of enamide of formula  $R_5R_6C:C(R_4)NHCOR_3$  [ $R_3$  = (un)substituted hydrocarbyl optionally having a substituent bonded through O;  $R_4$  = (un)substituted hydrocarbyl;  $R_5, R_6$  = H, (un)substituted hydrocarbyl; at least one of  $R_5$  and  $R_6$  is H] to imine compound of formula  $R_1O_2CCH:NR_2$  [ $R_1$  = (un)substituted hydrocarbyl;  $R_2$  =  $RCO, RO_2C$ ; wherein  $R$  = (un)substituted hydrocarbyl] in the presence of a chiral copper catalyst to give optically active  $\alpha$ -amino- $\gamma$ -imino acid ester (I) or (II) ( $R_1-R_6$  = same as above) with formation of chiral amino group. I and II are further converted into  $\alpha$ -amino- $\gamma$ -keto acid ester (III) or (IV) by acid hydrolysis or into  $\alpha,\gamma$ -diamino acid ester (V) or (VI) by reduction. Removing the acyl group of  $\gamma$ -amino group from the  $\alpha,\gamma$ -diamino acid ester V or VI followed by cyclization gives  $\gamma$ -lactams (VII) or

(VIII). Thus, 7.2 mg Cu(OTf)<sub>2</sub> was dried at 100° for 2 h followed by adding 10.8 mg (1R,2R)-1,2-diphenyl-1,2-bis(1-naphthylamino)ethane under Ar and then 1.5 mL CH<sub>2</sub>Cl<sub>2</sub> and the light blue solution was stirred for ≥2 h and cooled at 0°. To the solution were added a solution of 0.30 mmol enamide (IX) in 0.8 mL CH<sub>2</sub>Cl<sub>2</sub> and then slowly a solution of 0.20 mmol EtO<sub>2</sub>CCH:NCOC<sub>11</sub>H<sub>23</sub> in 2.0 mL for 30 min. The resulting reaction was stirred at 0° for 15 min and quenched by adding saturated aqueous NaHCO<sub>3</sub> to give 77% α-amino-γ-imino acid (X) in a syn/anti ratio of 86/14 with 94% ee (syn).

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:696857 CAPLUS

DN 143:193722

TI Process for the preparation of optically active α-hydroxy-γ-keto acid ester and hydroxydiketone via enantioselective nucleophilic addition of enamide

IN Kobayashi, Shu

PA Japan Science and Technology Agency, Japan

SO PCT Int. Appl., 46 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005070864	A1	20050804	WO 2005-JP1281	20050124
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1707556	A1	20061004	EP 2005-704278	20050124
	R: DE, FR, GB				
	US 2007073087	A1	20070329	US 2006-587078	20061020
PRAI	JP 2004-16408	A	20040123		
	JP 2004-249251	A	20040827		
	WO 2005-JP1281	W	20050124		
AB	A process of enantioselective nucleophilic addition reaction to carbonyl, which enables asym. synthesis of optically active α-hydroxy-γ-keto acid esters, optically active α-hydroxy-γ-amino acid esters, hydroxydiketone compds., etc. was provided. In this method, the nucleophilic addition reaction of enamide compound accompanied by hydroxyl (-OH) formation to carbonyl was carried out in the presence of a chiral catalyst with copper or nickel. For example, a mixture of (1R,2R)-N,N'-bis[(4-bromophenyl)methylene]-1,2-cyclohexanediamine (9.9 mg), CuClO <sub>4</sub> ·4CH <sub>3</sub> CN (6.5 mg) in CH <sub>2</sub> Cl <sub>2</sub> (1.5 mL) was stirred for 8 h. The resulting mixture was then treated with Et glyoxalate (100 μL, 0.40 mmol)/CH <sub>2</sub> Cl <sub>2</sub> (0.8 mL) and (1-phenylethenyl)carbamic acid phenylmethyl ester (0.20 mmol)/CH <sub>2</sub> Cl <sub>2</sub> (0.8 mL) at 0 °C for 1 h. Aqueous work-up followed by subsequent reaction with 48% HBr (0.3 mL) for 1.5 min. and silica-gel purification afforded (2S)-2-hydroxy-4-oxo-4-phenylbutyric acid Et ester in 97% ee, 93% yield.				

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> s optically active hydroxy diketone
102592 OPTICALLY
996015 ACTIVE
1247 ACTIVES
996737 ACTIVE
      (ACTIVE OR ACTIVES)
459502 HYDROXY
      11 HYDROXIES
459513 HYDROXY
      (HYDROXY OR HYDROXIES)
13591 DIKETONE
14373 DIKETONES
21800 DIKETONE
      (DIKETONE OR DIKETONES)
L10      0 OPTICALLY ACTIVE HYDROXY DIKETONE
      (OPTICALLY (W) ACTIVE (W) HYDROXY (W) DIKETONE)
```

```
=> s alpha hydroxy gamma lactones
1706748 ALPHA
      2487 ALPHAS
1706856 ALPHA
      (ALPHA OR ALPHAS)
459502 HYDROXY
      11 HYDROXIES
459513 HYDROXY
      (HYDROXY OR HYDROXIES)
860107 GAMMA
      4918 GAMMAS
860288 GAMMA
      (GAMMA OR GAMMAS)
      28024 LACTONES
L11      16 ALPHA HYDROXY GAMMA LACTONES
      (ALPHA (W) HYDROXY (W) GAMMA (W) LACTONES)
```

```
=> d L11 1-16 bib abs
```

```
L11 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:601645 CAPLUS
DN 135:331301
TI Innovation of hydrocarbon oxidation with molecular oxygen and related
reactions
AU Ishii, Yasutaka; Sakaguchi, Satoshi; Iwahama, Takahiro
CS Department of Applied Chemistry, Faculty of Engineering and High
Technology Research Center, Kansai University, Suita, Osaka, 564-8680,
Japan
SO Advanced Synthesis & Catalysis (2001), 343(5), 393-427
CODEN: ASCAF7; ISSN: 1615-4150
PB Wiley-VCH Verlag GmbH
DT Journal; General Review
LA English
AB A review with refs. An innovation of the aerobic oxidation of hydrocarbons
through catalytic carbon radical generation under mild conditions was
achieved by using N-hydroxyphthalimide (NHPI) as a key compound Alkanes
were successfully oxidized with O or air to valuable oxygen-containing compds.
such as alcs., ketones, and dicarboxylic acids by the combined catalytic
system of NHPI and a transition metal such as Co or Mn. The
NHPI-catalyzed oxidation of alkylbenzenes with dioxygen could be performed
even under normal temperature and pressure of dioxygen. Xylenes and
methylpyridines were also converted into phthalic acids and
pyridinecarboxylic acids, resp., in good yields. The present oxidation
method was extended to the selective transformations of alcs. to carbonyl
compds. and of alkynes to ynones. The epoxidn. of alkenes using
hydroperoxides or H2O2 generated in situ from hydrocarbons or alcs. and O2
under the influence of the NHPI was demonstrated and seems to be a useful
strategy for industrial applications. The NHPI method is applicable to a
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wide variety of organic syntheses via carbon radical intermediates. The catalytic carboxylation of alkanes was accomplished by the use of CO and O<sub>2</sub> in the presence of NHPI. In addition, the reactions of alkanes with NO, and SO<sub>2</sub> catalyzed by NHPI provided efficient methods for the synthesis of nitroalkanes and sulfonic acids, resp. A catalytic carbon-carbon bond forming reaction was achieved by allowing carbon radicals generated in situ from alkanes or alcs. to react with alkenes under mild conditions. A table of contents in this review includes: (1) Introduction: (2) Discovery of NHPI as Carbon Radical Producing Catalyst from Alkanes: (2.1) Historical Background: (2.2) Catalysis of NHPI in Aerobic Oxidation: (3) NHPI-Catalyzed Aerobic Oxidation: (3.1) Oxidation of Benzylic Compds.: (3.2) Alkane Oxidns. with Mol. Oxygen: (3.3) Oxidation of Alkylbenzenes: (3.4) Practical Oxidation of Methylpyridines: (3.5) Preparation of Acetylenic Ketones via Alkyne Oxidation: (3.6) Oxidation of Alcs.: (3.7) Selective Oxidation of Sulfides to Sulfoxides: (3.8) Production of Hydrogen Peroxide by Aerobic Oxidation of Alcs.: (3.9) Epoxidn. of Alkenes using Mol. Oxygen as Terminal Oxidant: (4) Carboxylation of Alkanes with CO and O<sub>2</sub>: (5) Utilization of NO<sub>x</sub> in Organic Synthesis: (5.1) First Catalytic Nitration of Alkanes using NO<sub>2</sub>: (5.2) Reaction of NO<sub>2</sub> with Organic Compds.: (6) Sulfoxidn. of Alkanes Catalyzed by Vanadium: (7) Carbon-Carbon Bond Forming Reaction via Catalytic Carbon Radicals Generated from Various Organic Compds. Assisted by NHPI: (7.1) Oxyalkylation of Alkenes with Alkanes and Dioxygen: (7.2) Synthesis of  $\alpha$ -Hydroxy- $\gamma$ -lactones by Addition of  $\alpha$ -Hydroxy Carbon Radicals to Unsatd. Esters: (7.3) Hydroxyacylation of Alkenes using 1,3-Dioxolanes and Dioxygen: (8) Conclusions.

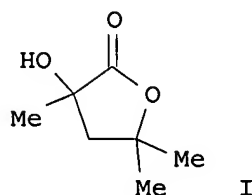
RE.CNT 394 THERE ARE 394 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2001:111600 CAPLUS  
DN 134:147111  
TI Development of catalytic carbon radical generation and its application to organic synthesis  
AU Ishii, Yasutaka  
CS Dep. Appl. Chem., Fac. Eng. High Technol. Res. Cent., Kansai Univ., 3-3-35, Yamate-cho, Suita, Osaka, 564-8640, Japan  
SO Yuki Gosei Kagaku Kyokaishi (2001), 59(1), 2-10  
CODEN: YGKKAE; ISSN: 0037-9980  
PB Yuki Gosei Kagaku Kyokai  
DT Journal; General Review  
LA Japanese  
AB A review with 36 refs. A novel strategy for organic synthesis via radical intermediates was developed by using N-hydroxyphthalimide (NHPI) as the key catalyst. C radicals were successfully generated from various hydrocarbons under the influence of NHPI combined with Co(II) salt and dioxygen, and the C radicals thus formed were applied to a variety of synthetic reactions. Firstly, in the reaction with alkanes, O-containing compds. such as alcs., ketones, and carboxylic acids were produced through the formation of alkyl radicals in good yields. Secondly, the treatment of alkenes with hydroperoxides, which are derived from the reaction of alkyl radicals thus generated with dioxygen, afforded epoxides in good yields. In contrast, the trapping of alkyl radicals prepared by the present method by NO<sub>2</sub> and SO<sub>2</sub> under mild conditions provided an efficient method for the synthesis of nitroalkanes and sulfonic acids, resp. Finally, the generation of  $\alpha$ -hydroxycarbon radicals from alcs. was also successful, and the synthesis of  $\alpha$ -hydroxy- $\gamma$ -lactones, which so far had been difficult to prepare by the conventional methods, was achieved in high yields by allowing them to react with acrylates.

L11 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2000:199563 CAPLUS  
DN 133:43394  
TI Catalytic  $\alpha$ -hydroxy carbon radical generation and addition.

Synthesis of  $\alpha$ -hydroxy- $\gamma$ -lactones from alcohols,  $\alpha,\beta$ -unsaturated esters and dioxygen

AU Iwahama, Takahiro; Sakaguchi, Satoshi; Ishii, Yasutaka  
CS Dep. Appl. Chem., Fac. Eng. & High Technol. Res. Cent., Kansai University, Suita, Osaka, 564-8680, Japan  
SO Chemical Communications (Cambridge) (2000), (7), 613-614  
CODEN: CHCOFS; ISSN: 1359-7345  
PB Royal Society of Chemistry  
DT Journal  
LA English  
OS CASREACT 133:43394  
GI



AB A catalytic method for  $\alpha$ -hydroxy carbon radical generation from alcs. has been developed and a convenient and synthetically useful approach to  $\alpha$ -hydroxy- $\gamma$ -lactones constructed. E.g., reaction of  $\text{Me}_2\text{CHOH}$  and Me methacrylate in presence of N-hydroxyphthalimide,  $\text{Co}(\text{OAc})_2$ ,  $\text{Co}(\text{acac})_3$ , and  $\text{O}_2$  gave hydroxy lactone I.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 4 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2000:108837 CAPLUS  
DN 132:251037  
TI  $\text{Mn}(\text{OAc})_3$ -promoted hydroxylation of  $\alpha$ -carbomethoxy- $\gamma$ -lactones by molecular oxygen  
AU Lamarque, Laurent; Meou, Alain; Brun, Pierre  
CS Laboratoire de Synthèse Organique Sélective, associé au CNRS, GCOPL, ESA 6114, Université de la Méditerranée, Marseille, F-13288, Fr.  
SO Canadian Journal of Chemistry (2000), 78(1), 128-132  
CODEN: CJCHAG; ISSN: 0008-4042  
PB National Research Council of Canada  
DT Journal  
LA English  
OS CASREACT 132:251037  
AB The  $\text{Mn}(\text{OAc})_3$ -mediated hydroxylation of a series of  $\alpha$ -carbomethoxy- $\gamma$ -lactones by mol. oxygen is described. The reaction is regio- and stereoselective and gives  $\alpha$ -carbomethoxy- $\alpha$ -hydroxy- $\gamma$ -lactones.

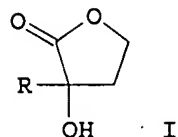
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L11 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1995:58255 CAPLUS  
DN 122:55854  
TI Aqueous hetero Diels-Alder reactions: the carbonyl case  
AU Lubineau, A.; Auge, J.; Grand, E.; Lubin, N.  
CS Lab. Chimie Organique Multifonctionnelle, Inst. Chimie Mol. Orsay, Orsay, 91405, Fr.  
SO Tetrahedron (1994), 50(34), 10265-76  
CODEN: TETRAB; ISSN: 0040-4020  
DT Journal

LA English  
OS CASREACT 122:55854  
AB Com. available aqueous solution of glyoxylic acid, pyruvaldehyde and glyoxal were

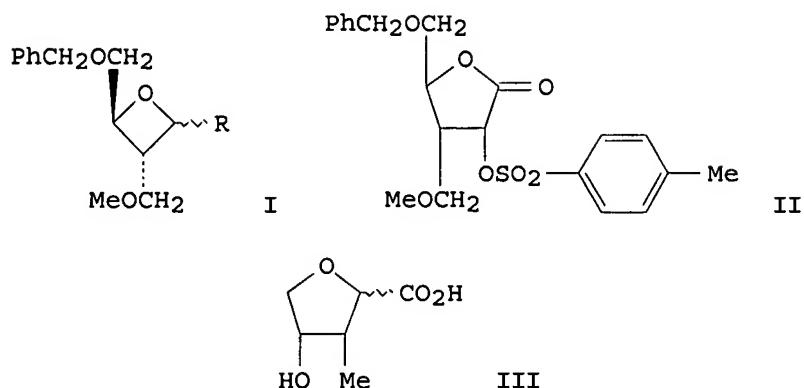
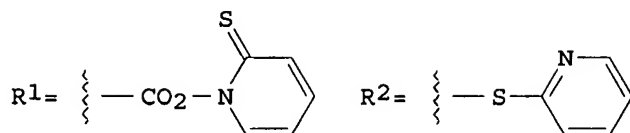
shown to react with cyclic or non-cyclic dienes to give the corresponding cycloadducts and/or  $\alpha$ -hydroxy  $\gamma$ -lactones. Activated ketone (Pyruvic acid) was shown to react as well in the same conditions.

L11 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1993:233793 CAPLUS  
DN 118:233793  
TI Preparation of  $\alpha$ -hydroxy- $\gamma$ -lactones and their application in the synthesis of  $\alpha,\beta$ -butenolides,  $\alpha$ -alkylidene- $\gamma$ -lactones and furans  
AU Munoz, A. Heber; Tamariz, Joaquin; Jiminez, Rogelio; Garcia de la Mora, Gustavo  
CS Dep. Quim. Org., Esc. Nac. Cienc. Biol., Mexico City, 11340, Mex.  
SO Journal of Chemical Research, Synopses (1993), (2), 68-9  
CODEN: JRPSDC; ISSN: 0308-2342  
DT Journal  
LA English  
OS CASREACT 118:233793  
GI



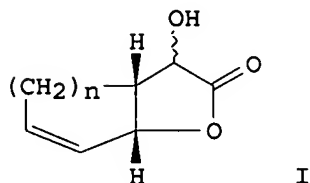
AB A straightforward synthesis of  $\alpha$ -hydroxy- $\gamma$ -butyrolactones, e.g. I (R = ME, Ph), was carried out by condensation reaction of the lithium anion of ethoxyethyl-protected cyanohydrins with epoxides, followed by acidic treatment. Synthetic applications of these synthons in the preparation of interesting  $\alpha,\beta$ -butenolides,  $\alpha$ -alkylidene- $\gamma$ -lactones and furans are described.

L11 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1993:169505 CAPLUS  
DN 118:169505  
TI Ring contraction reactions of 2-O-methanesulfonates of  $\alpha$ -hydroxy- $\gamma$ -lactones in aqueous medium to oxetane-2-carboxylic acids: a convenient synthesis of 3'-O-methyloxetanocin and a formal synthesis of oxetanocin  
AU Saksena, Anil K.; Ganguly, Ashit K.; Girijavallabhan, Viyyoor M.; Pike, Russell E.; Chen, Yao Tsung; Puar, Mohindar S.  
CS Schering-Plough Res. Inst., Bloomfield, NJ, 07003, USA  
SO Tetrahedron Letters (1992), 33(50), 7721-4  
CODEN: TELEAY; ISSN: 0040-4039  
DT Journal  
LA English  
OS CASREACT 118:169505  
GI



AB Barton decarboxylative rearrangement of oxetanethiohydroxamic ester I (R = R1) directly provided the key oxetanosyl-thiopyridyl glycosides I (R = R2) which were successfully coupled to N-benzoyladenine to give after deblocking 3'-O-methyloxetanocin. A two-step ring contraction of the toxylate II to the oxetane-2-carboxamide I (R = CONHCH2Ph), is described. A ring expansion reaction of  $\alpha$ -I (R = CO2H) to furancarboxylic acid III, was also observed

L11 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1992:128538 CAPLUS  
 DN 116:128538  
 TI Hetero Diels-Alder reaction in water. Synthesis of  $\alpha$  - hydroxy- $\gamma$  -lactones  
 AU Lubineau, Andre; Auge, Jacques; Lubin, Nadege  
 CS Inst. Chim. Mol. Orsay, Univ. Paris-Sud, Orsay, F-91405, Fr.  
 SO Tetrahedron Letters (1991), 32(51), 7529-30  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 OS CASREACT 116:128538  
 GI



AB The hetero Diels-Alder reaction of cyclopentadiene or cyclohexadiene with aqueous solution of glyoxylic acid produces  $\alpha$  -hydroxy- $\gamma$  -lactones I (n = 1, 2) arising from the rearrangement of the cycloadducts.

L11 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1991:122913 CAPLUS  
 DN 114:122913



TI Ring contraction of 3-deoxy-2-O-trifluoromethanesulfonates of  $\alpha$ -hydroxy- $\gamma$ -lactones to oxetanes

AU Witty, D. R.; Fleet, G. W. J.; Choi, S.; Vogt, K.; Wilson, F. X.; Wang, Y.; Storer, R.; Myers, P. L.; Wallis, C. J.

CS Dyson Perrins Lab., Oxford Univ., Oxford, OX1 3QY, UK

SO Tetrahedron Letters (1990), 31(47), 6927-30

CODEN: TELEAY; ISSN: 0040-4039

DT Journal

LA English

OS CASREACT 114:122913

AB  $\alpha$ -Triflates of 3-deoxy-1,4-lactones bearing H or alkyl substituents in the 3-position undergo ring contraction to Me oxetane-2-carboxylates on treatment with K<sub>2</sub>CO<sub>3</sub>-MeOH.

L11 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1991:24353 CAPLUS

DN 114:24353

TI Ring contraction of 2-O-trifluoromethanesulfonates of  $\alpha$ -hydroxy- $\gamma$ -lactones to oxetane carboxylic esters

AU Witty, D. R.; Fleet, G. W. J.; Vogt, K.; Wilson, F. X.; Wang, Y.; Storer, R.; Myers, P. L.; Wallis, C. J.

CS Dyson Perrins Lab., Oxford Univ., Oxford, OX1 3QY, UK

SO Tetrahedron Letters (1990), 31(33), 4787-90

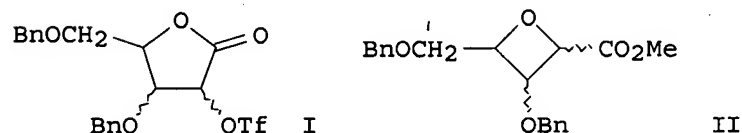
CODEN: TELEAY; ISSN: 0040-4039

DT Journal

LA English

OS CASREACT 114:24353

GI



AB 2-O-Trifluoromethanesulfonate esters of the four diastereomeric 3,5-di-O-benzyl-pentono-1,4-lactones I gave, on treatment with K<sub>2</sub>CO<sub>3</sub> in MeOH efficient ring contraction to Me oxetane-2-carboxylic esters II. The stereochem. at C-2 of the resulting oxetanes is determined largely by the configuration at C-3, rather than C-2, of the lactone.

L11 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1990:35579 CAPLUS

DN 112:35579

TI A convenient synthesis of  $\gamma$ -alkyl- $\alpha$ -hydroxy- $\gamma$ -lactones as a food intake-control substance

AU Nakano, Taichi; Ino, Yurika; Nagai, Yoichiro

CS Dep. Chem., Gunma Univ., Kiryu, 376, Japan

SO Chemistry Letters (1989), (4), 567-8

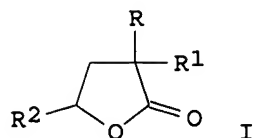
CODEN: CMLTAG; ISSN: 0366-7022

DT Journal

LA English

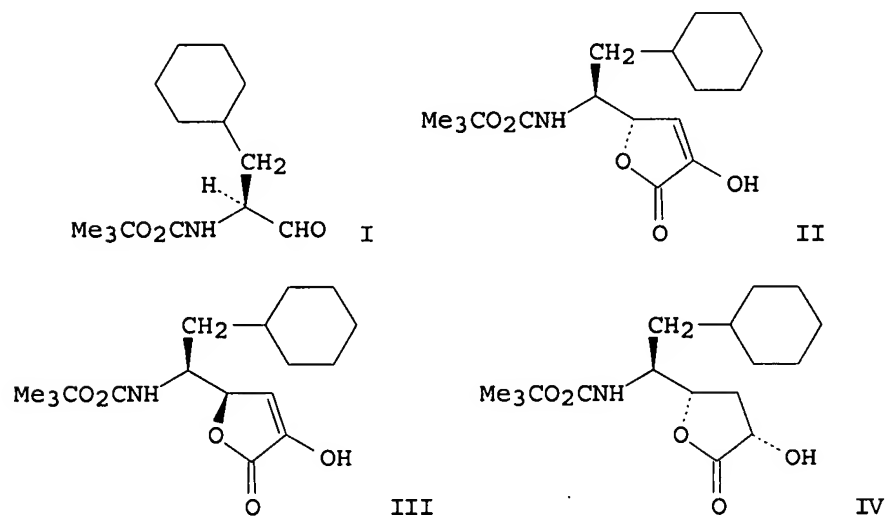
OS CASREACT 112:35579

GI



AB A series of new  $\gamma$ -alkyl-  $\alpha$  -hydroxy-  
 gamma.-lactones which are promising as excellent food  
 intake-control substances was synthesized in high yields by the hydrolysis  
 of  $\gamma$ -alkyl- $\alpha$ -chloro- $\gamma$ -lactones. Thus, treatment of I [R  
 = Cl, R1 = H, R2 = Bu, CH<sub>2</sub>CHMe<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>Me, n = 4-7, 9, 11; R1 = Me, R2 =  
 Bu, (CH<sub>2</sub>)<sub>6</sub>Me] with aqueous K<sub>2</sub>CO<sub>3</sub> followed by aqueous HCl, gave 91-100% I (R =  
 OH).

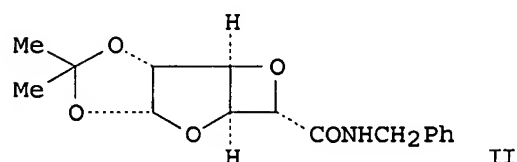
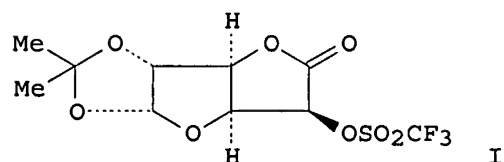
L11 ANSWER 12 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1989:173017 CAPLUS  
 DN 110:173017  
 TI New diastereoselective synthesis of novel chiral  $\gamma$ -(aminoalkyl)-  
 alpha.-hydroxy  $\gamma$  -lactones and  
 their application for the synthesis of renin inhibitors  
 AU Metternich, Rainer; Luedi, Werner  
 CS Preclin. Res., SANDOZ Ltd., Basle, CH-4002, Switz.  
 SO Tetrahedron Letters (1988), 29(32), 3923-6  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 OS CASREACT 110:173017  
 GI



AB Aldol cyclization of MeCOCO<sub>2</sub>Me with protected L-cyclohexylalaninal I gave  
 a 90:10 mixture of hydroxybutenolides II and III, resp. Stereoselective  
 hydrogenation of II gave title compound IV, which was subsequently used to  
 prepare renin inhibitors.

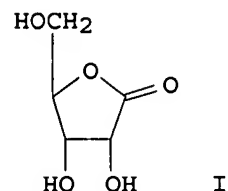
L11 ANSWER 13 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1988:423276 CAPLUS  
 DN 109:23276  
 TI Chiral oxetanes from sugar lactones: synthesis of derivatives of  
 3,5-anhydro-1,2-O-isopropylidene- $\alpha$ -D-glucuronic acid and of  
 3,5-anhydro-1,2-O-isopropylidene- $\beta$ -L-iduronic acid

AU Austin, G. N.; Fleet, G. W. J.; Peach, J. M.; Prout, K.; Son, Jong Chan  
 CS Dyson Perrins Lab., Oxford Univ., Oxford, OX1 3QY, UK  
 SO Tetrahedron Letters (1987), 28(40), 4741-4  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 OS CASREACT 109:23276  
 GI



AB Ring contraction reactions of triflates of  $\alpha$  - hydroxy- $\gamma$  -lactones provide an approach to the synthesis of chiral polyfunctionalized oxetanes from sugars. Treatment of 1,2-O-isopropylidene-5-O-trifluoromethanesulfonyl- $\alpha$ -D-glucuronolactone (I) with benzylamine or with  $K_2CO_3$  in MeOH gave ring contraction reactions to form oxetanes, e.g., II, in good yield.

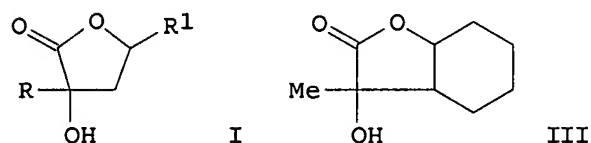
L11 ANSWER 14 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1987:459384 CAPLUS  
 DN 107:59384  
 TI [1- $^{13}C$ ]Aldono-1,4-lactones: conformational studies based on proton-proton, proton-carbon-13, and carbon-13-carbon-13 spin couplings and ab initio molecular orbital calculations  
 AU Angelotti, Timothy; Krisko, Michael; O'Connor, Thomas; Serianni, Anthony S.  
 CS Dep. Chem., Univ. Notre Dame, Notre Dame, IN, 46556, USA  
 SO Journal of the American Chemical Society (1987), 109(15), 4464-72  
 CODEN: JACSAT; ISSN: 0002-7863  
 DT Journal  
 LA English  
 OS CASREACT 107:59384  
 GI



AB Several aldono-1,4-lactones, e.g., I, were prepared with [ $^{13}C$ ]enrichment (99 atom %) at the carbonyl carbon.  $^1H$  (300 and 600 MHz) and  $^{13}C$  (75 MHz) NMR spectra in  $2H_2O$  were assigned, the latter with the aid of 2D  $^{13}C$   $^1H$  chemical shift correlation spectroscopy.  $^1H$ - $^{13}C$ ,  $^{13}C$ - $^1H$ , and  $^{13}C$ - $^{13}C$  couplings were used to evaluate lactone ring conformations. In general,

aldono-1,4-lactones in aqueous solution prefer conformations in which O2 is oriented quasi-equatorial. On the basis of ab initio STO-3G MO calcns. of two representative lactones, it appears that this preference is not due to stabilization conferred by intramol. hydrogen bonding, as generally believed, but to stereoelectronic factors found in  $\alpha$ -hydroxy- $\gamma$ -lactones. Theor. calcns. also revealed a notable effect of lone-pair oxygen orbitals on C-H bond lengths, namely, that C-H bonds are longest when antiperiplanar to a lone-pair orbital. This dependence may be responsible, in part, for the observed <sup>1</sup>H chemical shift patterns for these mols. A model is proposed to rationalize the dependence of dual-pathway <sup>13</sup>C-<sup>13</sup>C couplings on lactone ring configuration.

L11 ANSWER 15 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1983:505068 CAPLUS  
 DN 99:105068  
 TI Novel synthesis of  $\alpha$ -hydroxy- $\gamma$ -lactones  
 AU Garcia, Gustavo A.; Munoz, Heber; Tamariz, Joaquin  
 CS Fac. Quim., Univ. Nac. Auton. Mexico, Mexico City, 04510, Mex.  
 SO Synthetic Communications (1983), 13(7), 569-74  
 CODEN: SYNCAV; ISSN: 0039-7911  
 DT Journal  
 LA English  
 OS CASREACT 99:105068  
 GI



AB Protected cyanohydrins RCH(OCHMeOEt)CN (R = Pr, Me, MeCH:CH, Ph) reacted with alkylene and styrene epoxides to yield dihydrofuranones I (R1 = Me, H, Ph). Thus, MeCH(OCHMeOEt)CN (II) was treated with LiN(CHMe2)2 and propylene oxide to give I (R = R1 = Me). Benzofuranone derivative III was obtained from II and cyclohexene oxide.

L11 ANSWER 16 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1950:27322 CAPLUS  
 DN 44:27322  
 OREF 44:5317a-d  
 TI Stereoisomerism of  $\alpha$ -hydroxy- $\beta$ -alkyl- $\gamma$ -lactones  
 AU Fleck, F.; Schinz, H.  
 CS Eidg. Tech. Hochschule, Zurich, Switz.  
 SO Helvetica Chimica Acta (1950), 33, 140-5  
 CODEN: HCACAV; ISSN: 0018-019X  
 DT Journal  
 LA German  
 OS CASREACT 44:27322  
 AB  $\alpha$ -Keto- $\beta$ -methyl- $\gamma$ -butyrolactone, through its enol form, hydrogenates in acid, neutral, or basic media to give only one  $\alpha$ -hydroxy- $\beta$ -methyl- $\gamma$ -lactone (I) [benzoate, m. 82°; p-toluenesulfonate (II), m. 130-1°, d<sub>4</sub><sup>20</sup> 1.223, n<sub>D</sub><sup>20</sup> 1.463. When the Na derivative of I is heated 14 hrs. in Me2C6H4 and a N atmospheric at 144-8° and acidified, distillation gives the isomeric cis-lactone (III), b<sub>0.04</sub> 68-70°, d<sub>4</sub><sup>20</sup> 1.1940, n<sub>D</sub><sup>20</sup> 1.4593, M<sub>RD</sub> calculated 26.19, found 26.59, forms no benzoate or p-toluenesulfonate. I is thus the trans compound As a by-product, 10% Me2CHCH(OH)CO2H, m. 79-81°, is formed. II refluxed 7 hrs. with NaOAc, HOAc, and Ac2O gives 70% of the cis-acetate

(IV), d420 1.1773, nD20 1.4456, M RD calculated 35.63, found 35.76, which on saponification by NaOH gives a mixture of about equal parts of I and III. However, heating IV with EtOH and PhSO<sub>3</sub>H gives only III. I and C<sub>5</sub>H<sub>5</sub>N with SOCl<sub>2</sub> give 91%  $\alpha$ -chloro- $\beta$ -methyl- $\gamma$ -butyrolactone (V), viscous oil, b0-01 63-4°, d421 1.2420, nD21 1.4650, M RD calculated 29.61, found 29.95. With NaOH this gives a small amount of an acid m. 70-2° and an equal mixture of I and III. V and Ag<sub>2</sub>O give a similar mixture V can be obtained from III. In a 0.5-hr. alcoholysis of the 2 acetates. 15% IV and 20% of the trans compound react.

=> s alpha hydroxy gamma ketoacid ester

1706748 ALPHA  
2487 ALPHAS  
1706856 ALPHA  
(ALPHA OR ALPHAS)  
459502 HYDROXY  
11 HYDROXIES  
459513 HYDROXY  
(HYDROXY OR HYDROXIES)  
860107 GAMMA  
4918 GAMMAS  
860288 GAMMA  
(GAMMA OR GAMMAS)  
952 KETOACID  
437 KETOACIDS  
1240 KETOACID  
(KETOACID OR KETOACIDS)  
605403 ESTER  
444892 ESTERS  
839979 ESTER  
(ESTER OR ESTERS)

L12 1 ALPHA HYDROXY GAMMA KETOACID ESTER  
(ALPHA (W) HYDROXY (W) GAMMA (W) KETOACID (W) ESTER)

=> d L12 1 bib abs

L12 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:696857 CAPLUS  
DN 143:193722  
TI Process for the preparation of optically active  $\alpha$ -hydroxy- $\gamma$ -keto acid ester and hydroxydiketone via enantioselective nucleophilic addition of enamide  
IN Kobayashi, Shu  
PA Japan Science and Technology Agency, Japan  
SO PCT Int. Appl., 46 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005070864	A1	20050804	WO 2005-JP1281	20050124
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

EP 1707556	A1	20061004	EP 2005-704278	20050124
R: DE, FR, GB				
US 2007073087	A1	20070329	US 2006-587078	20061020
PRAI JP 2004-16408	A	20040123		
JP 2004-249251	A	20040827		
WO 2005-JP1281	W	20050124		

AB A process of enantioselective nucleophilic addition reaction to carbonyl, which enables asym. synthesis of optically active  $\alpha$ -hydroxy- $\gamma$ -keto acid esters, optically active  $\alpha$ -hydroxy- $\gamma$ -amino acid esters, hydroxydiketone compds., etc. was provided. In this method, the nucleophilic addition reaction of enamide compound accompanied by hydroxyl (-OH) formation to carbonyl was carried out in the presence of a chiral catalyst with copper or nickel. For example, a mixture of (1R,2R)-N,N'-bis[(4-bromophenyl)methylene]-1,2-cyclohexanediamine (9.9 mg), CuClO<sub>4</sub>·4CH<sub>3</sub>CN (6.5 mg) in CH<sub>2</sub>Cl<sub>2</sub> (1.5 mL) was stirred for 8 h. The resulting mixture was then treated with Et glyoxalate (100  $\mu$ L, 0.40 mmol)/CH<sub>2</sub>Cl<sub>2</sub> (0.8 mL) and (1-phenylethenyl)carbamic acid phenylmethyl ester (0.20 mmol)/CH<sub>2</sub>Cl<sub>2</sub> (0.8 mL) at 0 °C for 1 h. Aqueous work-up followed by subsequent reaction with 48% HBr (0.3 mL) for 1.5 min. and silica-gel purification afforded (2S)-2-hydroxy-4-oxo-4-phenylbutyric acid Et ester in 97% ee, 93% yield.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
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 NEWS 3 MAY 08 CA/CAPLUS Indian patent publication number format defined  
 NEWS 4 MAY 14 RDISCLOSURE on STN Easy enhanced with new search and display fields  
 NEWS 5 MAY 21 BIOSIS reloaded and enhanced with archival data  
 NEWS 6 MAY 21 TOXCENTER enhanced with BIOSIS reload  
 NEWS 7 MAY 21 CA/CAPLUS enhanced with additional kind codes for German patents  
 NEWS 8 MAY 22 CA/CAPLUS enhanced with IPC reclassification in Japanese patents  
 NEWS 9 JUN 27 CA/CAPLUS enhanced with pre-1967 CAS Registry Numbers  
 NEWS 10 JUN 29 STN Viewer now available  
 NEWS 11 JUN 29 STN Express, Version 8.2, now available  
 NEWS 12 JUL 02 LEMBASE coverage updated  
 NEWS 13 JUL 02 LEMBASE coverage updated  
 NEWS 14 JUL 02 SCISEARCH enhanced with complete author names  
 NEWS 15 JUL 02 CHEMCATS accession numbers revised  
 NEWS 16 JUL 02 CA/CAPLUS enhanced with utility model patents from China  
 NEWS 17 JUL 16 CAPLUS enhanced with French and German abstracts  
 NEWS 18 JUL 18 CA/CAPLUS patent coverage enhanced  
 NEWS 19 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification  
 NEWS 20 JUL 30 USGENE now available on STN  
 NEWS 21 AUG 06 CAS REGISTRY enhanced with new experimental property tags  
 NEWS 22 AUG 06 BEILSTEIN updated with new compounds  
 NEWS 23 AUG 06 FSTA enhanced with new thesaurus edition  
 NEWS 24 AUG 13 CA/CAPLUS enhanced with additional kind codes for granted patents  
 NEWS 25 AUG 20 CA/CAPLUS enhanced with CAS indexing in pre-1907 records  
 NEWS 26 AUG 27 Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB  
 NEWS 27 AUG 27 USPATOLD now available on STN  
 NEWS 28 AUG 28 CAS REGISTRY enhanced with additional experimental spectral property data

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,  
 CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
 AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

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	ENTRY	SESSION
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```
=> s enamide
      1070 ENAMIDE
      762 ENAMIDES
L1      1367 ENAMIDE
      (ENAMIDE OR ENAMIDES)

=> s reactions
L2      2214584 REACTIONS

=> s L1 and L2
L3      703 L1 AND L2

=> s chiral catalyst
      117772 CHIRAL
      16 CHIRALS
      117776 CHIRAL
      (CHIRAL OR CHIRALS)
      773474 CATALYST
      771016 CATALYSTS
      988746 CATALYST
      (CATALYST OR CATALYSTS)
L4      1957 CHIRAL CATALYST
      (CHIRAL(W) CATALYST)

=> s carbonyl compounds
      176243 CARBONYL
      27744 CARBONYLS
      184547 CARBONYL
      (CARBONYL OR CARBONYLS)
      878237 COMPOUNDS
      3 COMPOUNDES
      878240 COMPOUNDS
      (COMPOUNDS OR COMPOUNDES)
      1752844 COMPDS
      2212976 COMPOUNDS
      (COMPOUNDS OR COMPDS)
L5      30390 CARBONYL COMPOUNDS
      (CARBONYL(W) COMPOUNDS)

=> s L1 (w) L5
L6      0 L1 (W) L5

=> s L1 and L5
L7      13 L1 AND L5

=> s L7 and L4
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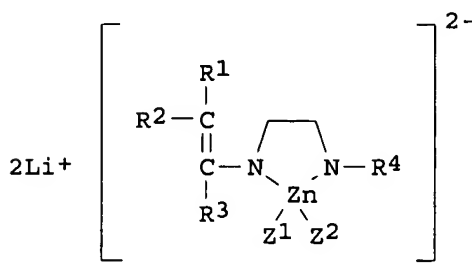


L8 0 L7 AND L4

=> d L7 1-13 bib abs

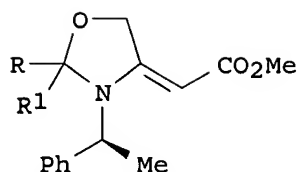
L7 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:890523 CAPLUS  
DN 143:211720  
TI Preparation of  $\alpha$ -aryl carbonyl compounds from  
aryl fluorides and enolates or enamides  
IN Nakamura, Eiichi; Nakamura, Masaharu; Miyazaki, Masahiro  
PA Japan Science and Technology Agency, Japan  
SO Jpn. Kokai Tokkyo Koho, 25 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005225846	A	20050825	JP 2004-39078	20040216
PRAI	JP 2004-39078		20040216		
OS	CASREACT 143:211720; MARPAT 143:211720				
GI					

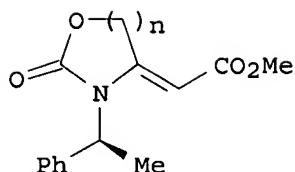


AB ACR1R2COR3 [R1, R2 = H, (un)substituted C1-20 hydrocarbyl; R3 = (un)substituted C1-20 hydrocarbyl, (un)substituted C1-20 alkoxy, (un)substituted amino; R2R3 may form ring; A = aromatic group] are prepared by reaction of R1R2C:CR3OLi (R1-R3 = same as above) with AF (A = same as above) in the presence of organolithium reagents, or reaction of AF with R1R2C:CR3NLiCH2CH2NLiR4 or enamides I [R1-R3 = same as above; R4 = (un)substituted C1-20 hydrocarbyl; Z1, Z2 = C1-6 alkyl]. Carbonyl compds. are prepared without using toxic heavy metal catalysts. Cyclohexanone was treated with Li 2,2,6,6-tetramethylpiperidide in THF at 0° for 1 h and treated with PhF at 0° for 3 h to give 62% 2-phenylcyclohexanone.

L7 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:15274 CAPLUS  
DN 140:163846  
TI New access to chiral cyclic  $\omega$ -oxygenated  $\beta$ -enamino esters by  
intramolecular aminocyclisation reactions  
AU David, Olivier; Vanucci-bacque, Corinne; Fargeau-bellassoued,  
Marie-claude; Lhommet, Gerard  
CS Laboratoire de Chimie des Heterocycles, Universite P. et M. Curie, UMR  
7611, Paris, F-75252, Fr.  
SO Heterocycles (2004), 62, 839-846  
CODEN: HTCYAM; ISSN: 0385-5414  
PB Japan Institute of Heterocyclic Chemistry  
DT Journal  
LA English  
OS CASREACT 140:163846  
GI



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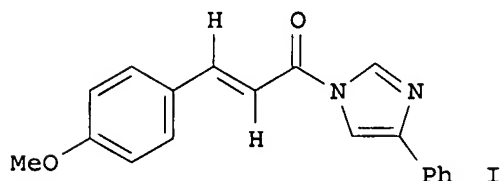


II

AB Nonracemic cyclic enamides I (R = H, Me, Me<sub>3</sub>C, Ph; R<sub>1</sub> = H, Me) are prepared stereoselectively; I are unstable to either acidic conditions or silica gel. Imines generated from carbonyl compds. and (S)-1-phenylethylamine undergo cyclocondensation reactions with Me 4-hydroxy-2-butyrate to yield I. Attempted preparation of homologs of I using Me 5-hydroxy-2-pentynoate and Me 6-hydroxy-2-hexynoate gives only complex and intractable mixts. Nonracemic cyclic carbamates II (n = 1, 3) are prepared by condensation of Me chlorocarbonate with Me 4-hydroxy-2-butyrate or Me 6-hydroxy-2-hexynoate to give carbonate esters which undergo stereoselective cyclocondensation with (S)-1-phenylethylamine. Attempted preparation of II (n = 2) from Me 5-hydroxy-2-pentynoate, (S)-1-phenylethylamine, and Me chlorocarbonate gives instead the nonracemic enamide (E)-H<sub>2</sub>C:CHCR<sub>2</sub>:CHCO<sub>2</sub>Me [R<sub>2</sub> = (S)-1-phenylethyl] as a 9:1 mixture of E and Z isomers.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:971555 CAPLUS  
DN 140:181381  
TI Catalytic asymmetric epoxidation of  $\alpha,\beta$ -unsaturated carboxylic acid imidazolides and amides by lanthanide-BINOL complexes  
AU Ohshima, Takashi; Nemoto, Tetsuhiro; Tosaki, Shin-ya; Kakei, Hiroyuki; Gnanadesikan, Vijay; Shibasaki, Masakatsu  
CS Graduate School of Pharmaceutical Sciences, The University of Tokyo, Hongo, Bunkyo-ku, Tokyo, 113-0033, Japan  
SO Tetrahedron (2003), 59(52), 10485-10497  
CODEN: TETRAB; ISSN: 0040-4020  
PB Elsevier Science B.V.  
DT Journal  
LA English  
OS CASREACT 140:181381  
GI

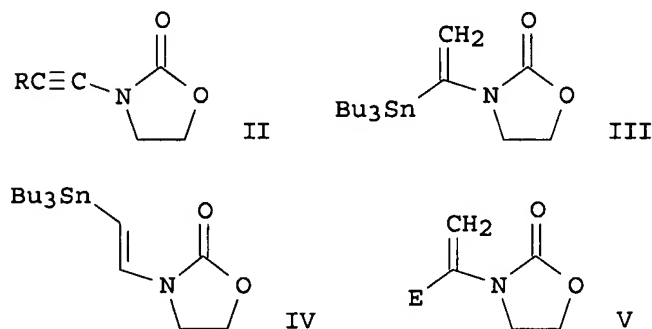


AB Highly enantioselective catalytic asym. epoxidn. of  $\alpha,\beta$ -unsatd. carboxylic acid imidazolides, e.g., I, and simple amides was developed. In the presence of a catalytic amount of lanthanide-BINOL complexes, the reaction proceeded smoothly with high substrate generality. In the cases of  $\alpha,\beta$ -unsatd. amides, there was nearly perfect enantioselectivity. The corresponding epoxides were successfully transformed into many types of useful chiral compds. such as

$\alpha,\beta$ -epoxy esters,  $\alpha,\beta$ -epoxy amides,  
 $\alpha,\beta$ -epoxy aldehydes,  $\alpha,\beta$ -epoxy  $\beta$ -keto ester,  
 and  $\alpha$ - and  $\beta$ -hydroxy carbonyl compds.  
 B3LYP d. functional studies were performed to predict substrate reactivity.

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:561398 CAPLUS  
 DN 140:199402  
 TI New stannyl enamides  
 AU Naud, Sebastien; Cintrat, Jean-Christophe  
 CS CEA/Saclay, Service de Marquage Moleculaire et Chimie Bio-organique, Bat.  
 547, Departement de Biologie Joliot-Curie, Gif sur Yvette, 91191, Fr.  
 SO Synthesis (2003), (9), 1391-1397  
 CODEN: SYNTBF; ISSN: 0039-7881  
 PB Georg Thieme Verlag  
 DT Journal  
 LA English  
 OS CASREACT 140:199402  
 GI



AB Stannyl enamines derived from N-(ethynyl)oxazolidin-2-ones were obtained. The authors describe the preparation of N-(ethynyl)oxazolidin-2-ones using phenyl[(trimethylsilyl)ethynyl]iodonium triflate (I). Initially the authors showed that hydrostannylation of HC.tplbond.CN(CH<sub>2</sub>Ph) (COPh) with Bu<sub>3</sub>SnH in presence of Pd(PPh<sub>3</sub>)<sub>4</sub> in THF when warmed to 60° gave Bu<sub>3</sub>Sn[(PhCO)(PhCH<sub>2</sub>)N]C:CH<sub>2</sub> in 80% yield regioselectively. The authors then synthesized 3-(alkynyl)oxazolidinones from I by N-(trimethylsilyl)ethynylation of oxazolidin-2-ones. E.g., 1,3-oxazolidin-2-one sequentially reacted with KHMDS (0°) and I in toluene (room temperature) to give the 3-(alkynyl)oxazolidinone 4a (shown as II, R = Me<sub>3</sub>Si) in 48% yield. 4A was then desilylated by TBAF/H<sub>2</sub>O to give 5a (shown as II, R = H) in 90% yield. The resulting N-(ethynyl)oxazolidin-2-one 5a was hydrostannylated with Bu<sub>3</sub>SnH to give stannyl enamides 6 $\alpha$  (55% yield) and 6 $\beta$  in a ratio of 70:30 (shown as III and IV, resp.). The 1st results of transmetalation and quenching expts. with prochiral carbonyl derivs. to give  $\beta$ -amino alcs. are also described. E.g., 6 $\alpha$  (III) was transmetalated with BuLi and the in situ  $\alpha$ -lithiated product was then trapped with electrophiles, H<sub>2</sub>O, hexanal, and iso-Pr Me ketone, to give N-(vinyl)oxazolidin-2-ones (V; E = H, CH(OH)(CH<sub>2</sub>)<sub>4</sub>Me, CH(OH)(Me)Pr-i) in yields 72, 47, and 28%, resp. The same expts. were conducted starting from an enantiomerically pure stannylated compound using identical prochiral carbonyl derivs. The authors showed that moving to a chiral 4-substituted oxazolidinone resulted in almost no change of the chemical yield either with an aldehyde or a ketone, and no diastereoselectivity could be seen in the <sup>1</sup>H NMR spectrum anal. of

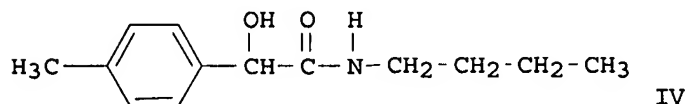
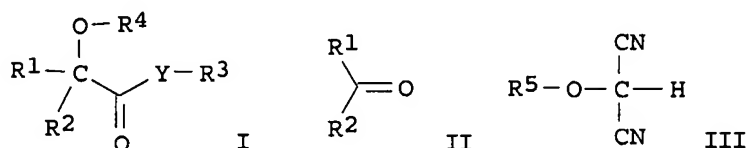
the crude reaction mixture

RE.CNT 26      THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7      ANSWER 5 OF 13    CAPLUS    COPYRIGHT 2007 ACS on STN  
AN      2002:444539    CAPLUS  
DN      137:33079  
TI      Process for preparation of  $\alpha$ -hydroxy amides and related  
          $\alpha$ -hydroxy carbonyl compounds by, e.g.,  
         condensation of carbonyl compounds,  
         (silyloxy)propanedinitriles, and amines  
IN      Nemoto, Hisao  
PA      Eisai Co., Ltd., Japan  
SO      U.S., 34 pp.  
         CODEN: USXXAM  
DT      Patent  
LA      English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6403818	B1	20020611	US 2001-794140	20010228
PRAI	US 2000-185399P	P	20000228		
OS	CASREACT 137:33079; MARPAT 137:33079				
GI					



AB      A novel process is disclosed for the one-pot preparation of  $\alpha$ -hydroxy carbonyl compds. (mostly  $\alpha$ -hydroxy amides) of formula I and their derivs. via the condensation of II and III in the presence of R3-YH [wherein: Y = O, S, NR6 (R6 = H, OH, alkyl, alkoxy, cycloalkyl, alkenyl, alkynyl, or (un)substituted 5- to 12-membered heteroaryl group, etc.); R1, R2 independently = H, alkyl, alkoxy, cycloalkyl, bicycloalkyl, alkenyl, alkynyl, heteroaryl or (un)substituted 5- to 12-membered heteroaryl group, etc.; R3 = H, OH, alkyl, alkoxy, cycloalkyl, alkenyl, alkynyl, aryl, (un)substituted 5 to 12-membered heteroaryl group, etc.; R4 = H, substituted silyl protecting group (preferably -SiMe3, -SiMe2tBu or SiPh2tBu), alkanoyl, alkenoyl, alkynoylaryloyl, heteroaryloyl, etc.; R5 = substituted silyl protecting group (preferably -TMS, -TBDMS or -TBDPS), alkanoyl, alkenoyl, alkynoyl, aryloyl, heteroaryloyl, etc.]. A key intermediate in the proposed process is the corresponding acyl cyanide, generated in situ from condensation of II and III. For example, to a stirred solution of 4-methylbenzaldehyde (1.0 mmol) and dinitrile III (R4 = tert-butyldimethylsilyl, 1.2 mmol) in acetonitrile (3 mL) at 0° was added n-butylamine (1.1 mmol) in one portion. After 5 min, a solution of tetrabutylammonium fluoride in THF (1.5 mmol) was added dropwise and the reaction stirred at 0° for an addnl. 20 min. The solution was concentrated and purified via silica gel column chromatog. to provide hydroxyacetamide IV as colorless powder in 94% yield. Approx. 75 specific examples of I were prepared. The invention is proposed to be useful for the production of statine analogs. The invention process gives products similar to the Passerini reaction, but uses amines

instead of isocyanides, and also gives higher yields.

RE.CNT 28      THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7    ANSWER 6 OF 13    CAPLUS    COPYRIGHT 2007 ACS on STN  
AN    2002:101777    CAPLUS  
DN    136:294687  
TI    A New Method for the Preparation of 2-Thio Substituted Furans by  
Methylsulfanylation of  $\gamma$ -Dithiane Carbonyl  
Compounds  
AU    Padwa, Albert; Eidell, Cheryl K.; Ginn, John D.; McClure, Michael S.  
CS    Department of Chemistry, Emory University, Atlanta, GA, 30322, USA  
SO    Journal of Organic Chemistry (2002), 67(5), 1595-1606  
CODEN: JOCEAH; ISSN: 0022-3263  
PB    American Chemical Society  
DT    Journal  
LA    English  
OS    CASREACT 136:294687  
AB    Several related methods for the preparation of differentially substituted  
2-thiofurans are described. The general procedure involves the formation  
of a thionium ion from a  $\gamma$ -dithianyl substituted carbonyl compound  
followed by cyclization of this reactive intermediate onto the tethered  
carbonyl group. Two methods for thionium ion generation were explored.  
One of these involved an acid-catalyzed reaction of  $\beta$ -ketene  
dithioacetals, prepared from the condensation of 2,2-  
bis(methylsulfanyl)acetaldehyde with a variety of ketones. Cyclization  
followed by loss of methanethiol gave 2-thiofurans in 70-90% yield.  
Attempts to prepare 5-heteroatom substituted 2-thiofurans from the  
corresponding  $\beta$ -ketene dithioacetal amides or esters were  
unsuccessful, leading to 1,2-thio rearranged products. A more successful  
route involved the reaction of  $\beta$ -acetoxy- $\gamma$ -thianyl  
carbonyl compds. with dimethyl(methylthio)sulfonium  
tetrafluoroborate. Treatment of the dithiane with this reagent resulted  
in the smooth generation of a thionium ion. Cyclization followed by loss  
of acetic acid afforded thiofurans in 40-100% yield. N-(2-Methylsulfanyl-  
5,6-dihydro-4H-furo[2,3-b]pyridine)but-3-enamide furnished a  
rearranged hexahydropyrroloquinolin-2-one in high yield when heated at 110  
°C.

RE.CNT 80      THERE ARE 80 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7    ANSWER 7 OF 13    CAPLUS    COPYRIGHT 2007 ACS on STN  
AN    2000:438393    CAPLUS  
DN    133:163815  
TI    Generalization of the aminopentadienal rearrangement  
AU    Bacilieri, Christian; Reic, Stefanie; Neuenschwander, Markus  
CS    Departement fur Chemie und Biochemie der Universitat Bern, Bern, CH-3012,  
Switz.  
SO    Helvetica Chimica Acta (2000), 83(6), 1182-1190  
CODEN: HCACAV; ISSN: 0018-019X  
PB    Verlag Helvetica Chimica Acta  
DT    Journal  
LA    German  
AB    Contrary to the rearrangement of 3-amino-3-X-prop-2-enals (X = Cl, OAc),  
which easily give 3-X-prop-2-enamides at low temperature, the  
postulated rearrangement of the vinylogous 5-amino-5-X-penta-2,4-dienals  
(I) normally stops at the level of 2-aminopyrylium salts (II). The main  
reason is that the charge in salts of type II is highly delocalized,  
leading to low-energy species, which make addition of weak nucleophiles  
difficult. Two concepts for increasing the chances of the  
aminopentadienal rearrangement  $I \rightarrow RR_1NCOCH:CHCH:CHX$  are  
presented and substantiated by typical expts. On one side, the easily  
available 2-aminopyrylium chlorides II (X = Cl) are reacted with a 2-fold  
excess of secondary amines to give 5-(dialkylamino)penta-2,4-dienamides.  
On the other hand, after replacing the amino groups of I by PhO and EtO

groups, the corresponding 5-chloro-5-phenoxy- and 5-chloro-5-ethoxypenta-2,4-dienals easily rearrange at low temperature to give 5-chloropenta-2,4-diene-1-carboxylates which are now obviously lower in energy than the corresponding pyrylium-salt intermediates.

RE.CNT 35      THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7    ANSWER 8 OF 13    CAPLUS    COPYRIGHT 2007 ACS on STN  
AN    2000:42199    CAPLUS  
DN    132:222426  
TI    The synthesis and functionalization of quinuclidine enamine N-oxide and borane complex  
AU    O'Neill, Ian A.; Wynn, Duncan; Lai, Justine Y. Q.  
CS    Department of Chemistry, University of Liverpool, Liverpool, L69 7ZD, UK  
SO    Tetrahedron Letters (1999), Volume Date 2000, 41(2), 271-274  
      CODEN: TELEAY; ISSN: 0040-4039  
PB    Elsevier Science Ltd.  
DT    Journal  
LA    English  
OS    CASREACT 132:222426  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB    The synthesis of quinuclidine enamine N-oxide and quinuclidine enamine borane complex is described. Selective deprotonation of the double bond with Me<sub>3</sub>CLi allows direct functionalization at the  $\alpha$ -position with a range of electrophiles. E.g., treatment of 3-hydroxyquinuclidine with tosyl chloride in the presence of Et<sub>3</sub>N gives 3-quinuclidinol tosylate (I) in 83-90% yield; treatment of I with m-chloroperbenzoic acid gives the quinuclidinol tosylate N-oxide II in 76% yield which undergoes elimination with Me<sub>3</sub>COK in THF to give the enamide N-oxide III in 80% yield. E.g., treatment of I with borane gives the N-trihydridoborane quinuclidinol tosylate IV in 100% yield; IV undergoes elimination with Me<sub>3</sub>COK in THF to give the enamide N-borane complex V in 52% yield. E.g., treatment of III with Me<sub>3</sub>CLi in THF at -45° followed by addition of 9-fluorenone gives the quinuclidine VI regioselectively in 85% yield.

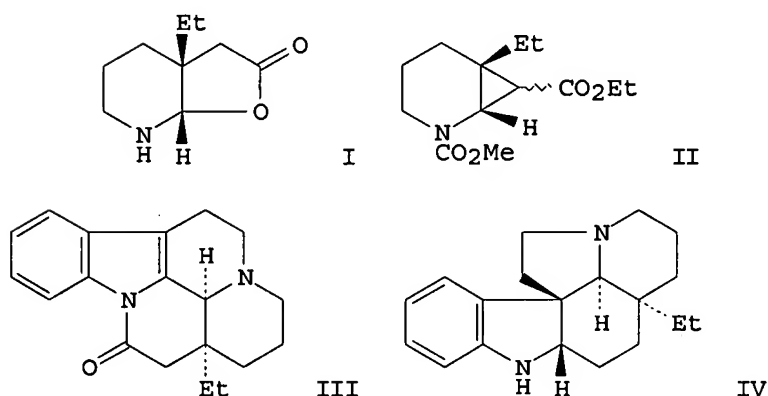
RE.CNT 10      THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7    ANSWER 9 OF 13    CAPLUS    COPYRIGHT 2007 ACS on STN  
AN    1996:644873    CAPLUS  
DN    125:328081  
TI    Samarium(II) iodide-mediated intermolecular coupling reactions of N,N-dibenzylenamides with carbonyl compounds and transformation of the product, N,N-dibenzyl- $\gamma$ -hydroxyamide to  $\delta$ -amino alcohol  
AU    Aoyagi, Yutaka; Maeda, Mikiko; Moro, Akira; Kubota, Ken; Fujii, Yohko; Fikaya, Haruhiko; Ohta, Akihiro  
CS    School Pharmacy, Tokyo Univ. Pharmacy Life Science, Tokyo, 192-03, Japan  
SO    Chemical & Pharmaceutical Bulletin (1996), 44(10), 1812-1818  
      CODEN: CPBTAL; ISSN: 0009-2363  
PB    Pharmaceutical Society of Japan  
DT    Journal  
LA    English  
OS    CASREACT 125:328081  
AB    Samarium(II) iodide-mediated intermol. coupling reactions of N,N-dibenzylenamides, e.g. (PhCH<sub>2</sub>)<sub>2</sub>NCOCH:CH<sub>2</sub>, with carbonyl compds., e.g. benzophenone, produced the corresponding N,N-dibenzyl- $\gamma$ -hydroxyamides, e.g. (PhCH<sub>2</sub>)<sub>2</sub>NCOCH<sub>2</sub>CH<sub>2</sub>CPh<sub>2</sub>OH, in

moderate to good yields. In one case, the  $\delta$ -amino alc. was prepared from the  $\gamma$ -hydroxy amide.

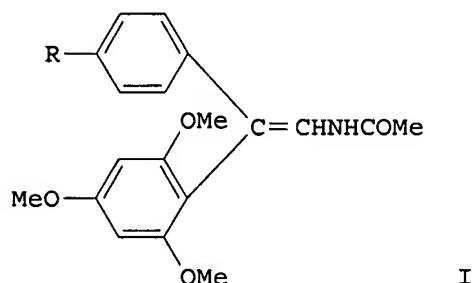
L7 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1992:531040 CAPLUS  
DN 117:131040  
TI Fluoride ion mediated Peterson alkenylation of N-[C,C-bis(trimethylsilyl)methyl]amido derivatives with carbonyl compounds: a short general route to enamides and 1,2-dihydroisoquinolines  
AU Palomo, Claudio; Aizpurua, Jesus M.; Legido, Marta; Picard, Jean Paul; Dunogues, Jacques; Constantieux, Thierry  
CS Fac. Quim., Univ. Pais Vasco, San Sebastian, 20080, Spain  
SO Tetrahedron Letters (1992), 33(27), 3903-6  
CODEN: TELEAY; ISSN: 0040-4039  
DT Journal  
LA English  
OS CASREACT 117:131040  
AB A straightforward general access to diversely substituted acyclic or cyclic enamides and dienamides is accomplished by using a fluoride induced Peterson olefination of carbonyl compds . and enolizable amides derived from C,C-bis(trimethylsilyl)methylamine. Thus, MeCON(CH<sub>2</sub>Ph)CH(SiMe<sub>3</sub>)<sub>2</sub> was treated with 4-MeC<sub>6</sub>H<sub>4</sub>CHO in THF containing tetrabutylammonium fluoride to give 60% MeCON(CH<sub>2</sub>Ph)CH:CHC<sub>6</sub>H<sub>4</sub>Me-4.

L7 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1988:204862 CAPLUS  
DN 108:204862  
TI Synthesis of eburnamonine and dehydroaspidospermidine  
AU Wenkert, Ernest; Hudlicky, Tomas  
CS Dep. Chem., Rice Univ., Houston, TX, 77001, USA  
SO Journal of Organic Chemistry (1988), 53(9), 1953-7  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
OS CASREACT 108:204862  
GI



AB The route of synthesis of  $\gamma$ -imino carbonyl compds ., e.g. I, by cyclopropanation of enamides and acid-catalyzed ring opening of the resultant  $\beta$ -amido cyclopropanecarboxylates II has been applied to the preparation of substituted 1-piperideines and therefrom to the synthesis of the alkaloids eburnamonine (III), dehydroaspidospermidine, and aspidospermidine (IV).

L7 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1981:406751 CAPLUS  
 DN 95:6751  
 TI The boron fluoride-catalyzed decomposition of diazo carbonyl  
 compounds in nitriles. Formation of enamides  
 AU Ibata, Toshikazu; Yamamoto, Masahiko  
 CS Coll. Gen. Educ., Osaka Univ., Osaka, 560, Japan  
 SO Chemistry Letters (1981), (2), 161-4  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DT Journal  
 LA English  
 OS CASREACT 95:6751  
 GI



AB The BF<sub>3</sub>-catalyzed decomposition of α-diazoacetophenones in MeCN, EtCN, or MeSCN in the presence of 1,3,5-trimethoxybenzene produced enamides (I; R = H, Me, MeO, Cl, Br) in 61-98% yield.

L7 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 1980:6198 CAPLUS  
 DN 92:6198  
 TI Enamides in organic synthesis. Part 3. A new acetaldehyde anion equivalent  
 AU Bielawski, Jacek; Brandaenge, Svante; Lindblom, Lars; Ramanvongse, Sunanta  
 CS Dep. Org. Chem., Univ. Stockholm, Stockholm, S-106 91, Swed.  
 SO Acta Chemica Scandinavica, Series B: Organic Chemistry and Biochemistry (1979), B33(6), 462-4  
 CODEN: ACBOCV; ISSN: 0302-4369  
 DT Journal  
 LA English  
 AB Reaction of 1-vinyl-2-pyrrolidinone with PhLi at -10 to -15° gave Li 2-phenyl-1-vinyl-2-pyrrolidinolate (I), which reacted with saturated aldehydes or ketones or α-ethylenic ketones to give, upon hydrolysis, ethylenic or δ-oxo aldehydes, resp. The reactions proceed via an Ach anion equivalent, which condenses with saturated carbonyl compds. or adds to ethylenic ketones. For example, I was treated with hexanal to give 27% (E)-2-octenal, whereas the 2-Bu analog of I reacted with chalcone to give 66% PhCOCH<sub>2</sub>CHPhCH<sub>2</sub>CHO.

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---Logging off of STN---

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Executing the logoff script...



=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	50.26	50.47
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-10.14	-10.14

STN INTERNATIONAL LOGOFF AT 11:11:26 ON 28 AUG 2007